

CLAIMS

1. A method for operating a transceiver for an asynchronous data transmission standard to relay data in accordance with a synchronous data transmission standard, said method comprising:

receiving a remotely transmitted signal formatted in accordance with said synchronous data transmission standard;

recovering a clock signal from said remotely transmitted signal;

in a first mode, directing said recovered clock signal to a clock input of said transceiver; and

in a second mode, directing a locally generated clock to said clock input.

2. The method of claim 1 further comprising:

switching from said first mode to said second mode upon loss of said remotely transmitted signal.

3. The method of claim 1 further comprising:

switching from said first mode to said second mode upon loss of recovered framing in said remotely transmitted signal.

4. The method of claim 1 wherein said synchronous data transmission standard is a SONET standard.

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5. The method of claim 1 wherein said synchronous data transmission standard is a G.709 standard.

6. The method of claim 1 wherein said asynchronous data transmission
10 standard is an Ethernet standard.

7. The method of claim 1 further comprising:

transferring data recovered from said remotely transmitted signal to said
transceiver for demultiplexing.

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8. The method of claim 7 further comprising:

using said transceiver to multiplex together multiple data streams to form a data
signal for modulation onto an optical signal, said data signal being clocked by said
recovered clock signal in said first mode and by said local clock in said second mode.

9. The method of claim 1 further comprising:

during said first mode, filtering said clock input using a phase lock loop operating
5 a first time constant; and

when switching from said second mode to said first mode, filtering said clock
input using said phase lock loop operating at a second time constant, said second time
constant being longer than said first time constant.

10 10. The method of claim 9 further comprising:

when switching from said first mode to said second mode, filtering said clock
input using said phase lock loop operating at said first time constant.

11. Apparatus for operating a transceiver for an asynchronous data
15 transmission standard to relay data in accordance with a synchronous data transmission
standard, said apparatus comprising:

a transponder that receives a remotely transmitted signal formatted in accordance
with said synchronous data transmission standard and recovers a clock signal from said
remotely transmitted signal;

a local clock source; and

a multiplexer that, in a first mode, directs said recovered clock signal to a clock
input of said transceiver and, in a second mode, directs output of said local clock source
5 to said clock input.

12. The apparatus of claim 11 wherein said multiplexer switches from said
first mode to said second mode upon loss of said remotely transmitted signal.

10 13. The apparatus of claim 11 wherein said multiplexer switches from said
first mode to said second mode upon loss of recovered framing in said remotely
transmitted signal.

14. The apparatus of claim 11 wherein said synchronous data transmission
15 standard is a SONET standard.

15. The apparatus of claim 11 wherein said synchronous data transmission
standard is a G.709 standard.

16. The apparatus of claim 11 wherein said asynchronous data transmission standard is an Ethernet standard.

5 17. The apparatus of claim 11 wherein data recovered from said remotely transmitted signal is transmitted to said transceiver for demultiplexing.

18. The apparatus of claim 11 further comprising:

a phase lock loop that, during said first mode, filters said clock input using a first
10 time constant and when switching from said second mode to said first mode, filters said clock input using a second time constant, said second time constant being longer than said first time constant.

19. The apparatus of claim 18 wherein, when switching from said first mode
15 to said second mode, said phase lock loop filters using said first time constant.

20. Apparatus for operating a transceiver for an asynchronous data transmission standard to relay data in accordance with a synchronous data transmission standard, said apparatus comprising:

means for receiving a remotely transmitted signal formatted in accordance with said synchronous data transmission standard;

means for recovering a clock signal from said remotely transmitted signal;

5 means for, in a first mode, directing said recovered clock signal to a clock input of said transceiver; and

means for, in a second mode, directing a locally generated clock to said clock input.

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